The Jackson Laboratory

B6J.Cg-*Sst* $^{tm2.1(cre)Zjh}$ /MwarJ

Stock No: **028864** | Sst-IRES-Cre knock-in (C57BL/6J)

Congenic, Targeted Mutation

Typically mice are recovered in 10-14 weeks. Contact Customer Service to place an order or for more information.

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studying dendritic inhibitory interneurons such as Martinotti cells and Oriens-Lacunosum-Moleculare cells.
While Sst-IRES-Cre was designed as a 3' knock-in allele, additional characterization indicates it has significantly diminished endogenous *Sst* expression - see details below. As such, researchers should consider using heterozygous AVP-IRES2-Cre-D mice and wildtype littermate controls in all their studies.
Of note, the same Sst-IRES-Cre knock-in allele is also available on a C57BL/6N genetic background as Stock No. 018973.

Donating Investigator

Z. Josh Huang, Cold Spring Harbor Laboratory

Melissa R Warden, Cornell University

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GENETIC OVERVIEW

Genetic Background	Generation

Sst$^{tm2.1(cre)Zjh}$

Allele Type	Gene Symbol	Gene Name
Targeted (Recombinase-expressing, Knockdown)	*Sst*	somatostatin

VIEW GENETICS

RESEARCH APPLICATIONS

Research Tools
Neurobiology Research

VIEW ALL RESEARCH APPLICATION

BASE PRICE

Starting at:

$2,854.50 Domestic price Cryo Recovery

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Details

Detailed Description

In an attempt to offer alleles on well-characterized or multiple genetic backgrounds, alleles are frequently moved to a genetic background different from that on which an allele was first characterized. The phenotype summarized belowis for the parental line: Sst-IRES-Cre knock-in mice on a mostly C57BL/6;129S4 genetic background (Stock No. 013044). It should be noted that the phenotype of this C57BL/6J-congenic line (Stock No. 028864 Sst-IRES-Cre knock-in (C57BL/6J)) could vary from that of the parental line from which it was derived. The phenotype belowdescribes the parental line (Stock No. 013044).

The Sst-IRES-Cre knock-in allele (or SOM-IRES-Cre) has an internal ribosome entry site and Cre recombinase in the 3' UTR of the somatostatin locus (*Sst*). As such, the endogenous *Sst* promoter/enhancer elements direct *cre* expression to somatostatin-expressing neurons. While Sst-IRES-Cre was designed as a 3' knock-in allele, additional characterization indicates it has significantly diminished endogenous *Sst* expression - see details below. As such, researchers should consider using heterozygous AVP-IRES2-Cre-D mice and wildtype littermate controls in all their studies.
When Sst-IRES-Cre mice are bred with mice containing *loxP*-flanked sequences, Cre-mediated recombination will result in deletion of the floxed sequences in the *Sst*-expressing cells in the offspring.

In 2010, the donating investigator of Stock No. 013044 reported Cre recombinase activity is specific and efficient; largely recapitulating the endogenous somatostatin expression pattern with efficient recombination. They reported Cre recombinase activity is observed in somatostatin positive neurons (including dendritic inhibitory interneurons such as Martinotti cells and Oriens-Lacunosum-Moleculare (O-LM) cells). The donating investigator did not examine *cre* expression in tissues other than brain. Sst expression from the Sst-IRES-Cre allele was not evaluated. They also reported that homozygous mice were viable, fertile and normal in size, with no gross physical abnormalities or behavioral abnormalities.

Although Sst-IRES-Cre was designed as a 3' knock-in allele, additional characterization indicates it has significantly diminished endogenous *Sst* expression. Specifically, in 2016, unpublished research using Stock No. 013044 reported the Sst-IRES-Cre allele had diminished Sst RNA expression, and homozygous mice had abnormal locomotor activity (reduced in males during circadian cycle active phase, increased in females by the end of circadian cycle active phase). Heterozygous mice had partial recovery of Sst expression and normal behavioral responses. Furthermore, the findings of another group confirmed Sst-IRES-Cre imparts an allele dosage-dependent knock-down of endogenous *Sst* expression [Viollet *et al.* 2017 Front Endocrinol (Lausanne) 8:131 (PMID:28674519)]. Researchers should consider using heterozygous Sst-IRES-Cre mice and wildtype littermate controls in their studies.

For characterization information of the Sst-IRES-Cre knock-in allele, see images at the Allen Institute for Brain Science website (Sst-IRES-Cre images).

If the recombinase activity pattern of this allele is further characterized by the Genetic Resource Science group at The Jackson Laboratory, such findings will be reported on the Mouse Genome Informatics (MGI) Allele Detail entry (*Sst*$^{tm2.1(cre)Zjh}$). This same information would also be found searching the MGI Recombinase Activity database.

Development

Expression Data

Control Suggestions

Genetics

Sst$^{tm2.1(cre)Zjh}$

Disease/Phenotype

Disease Terms

Research Areas By Phenotype

Mammalian Phenotype Terms by Genotype

References

Technical Support

CONTACT TECHNICAL SUPPORT

Genotyping Protocols

Separated PCR:Sst Alternate1
Genotyping resources and troubleshooting

Breeding Considerations

Homozygous mice are viable and fertile. When maintaining a live colony at The Jackson Laboratory Repository, homozygous mice may be bred together.
Researchers should consider using heterozygous Sst-IRES-Cre mice and wildtype littermate controls in their studies - please see strain description for more details.

Additional Breeding and Husbandry Support

Mating System
Heterozygote x Heterozygote

Citation
When using the Sst-IRES-Cre knock-in (C57BL/6J) mouse strain in a publication, please cite the originating article(s) and include JAX stock #028864 in your Materials and Methods section.

Animal Health Reports
Facility Barrier Level Descriptions

Production of mice from cryopreserved embryos or sperm occurs in a maximum barrier room, G200

Pricing & Availability

Cryo Recovery

Typically mice are recovered in 10-14 weeks. Contact Customer Service to place an order or for more information.

DomestiqInternatio

Pricing effective for USA, Canada and Mexico shipping destinations

CRYORECOVERY - DOMESTIC PRICING

SERVICE/PRODUCT	DESCRIPTION	PRICE
Cryo Recovery	Heterozygous or wildtype for Sst<tm2.1(cre)Zjh>	$2,854.50

RELATED PRODUCTS AND SERVICES

Frozen Mouse Embryo	B6J.Cg-Sst<tm2.1(cre)Zjh>/MwarJ	$2595.00

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THE JACKSON LABORATORY'S GENOTYPE PROMISE

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one breeding pair to avoid delays in their research.

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